



the ILLINOIS ENGINEER



Public Works Men of the Year 1961



D. V. Auld



H. A. Barnes



H. A. Benner



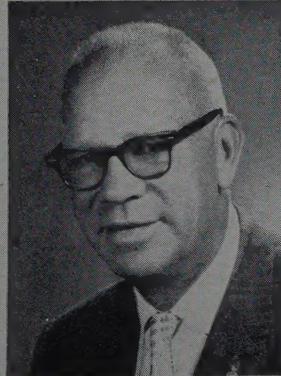
W. A. Bugge



G. De Ment



R. H. Hess



D. B. Lee



E. Maier



J. L. Vincenz



A. C. Welling



THE ILLINOIS ENGINEER

OCTOBER, 1961

VOLUME XXXVII, NO. 10

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P. F. T. EQUIPMENT SERVING MILITARY ACADEMIES

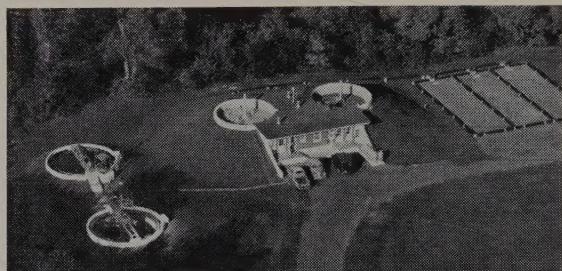
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NAVY

Annapolis, Maryland. Two 25' Floating Covers. Two Supernatant Selectors and Supernatant Selector Gauges.



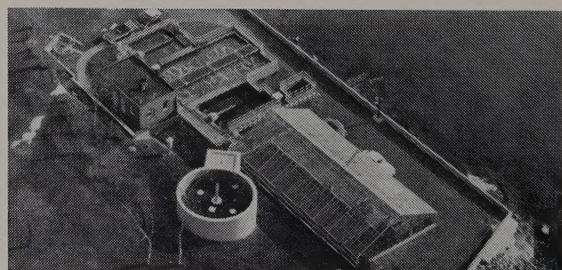
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COVER
TEN TOP PUBLIC WORKS
MEN-OF-THE-YEAR
George De Ment of ISPE Honored

MINNEAPOLIS, MINN. (Sept. 27)--George De Ment, Commissioner, Department of Public Works, Chicago, and a member of the Illinois Society of Professional Engineers, was accorded nation-wide honor as one of the TOP TEN PUBLIC WORKS MEN-OF-THE YEAR. Mr. De Ment was cited for ingenuity in meeting the needs of Chicago's rapidly increasing population and application of new engineering techniques to answer the problems and meet the challenge inherent in large communities.

Ten public works officials from a large field of nominees have been named as the outstanding men in their field. The announcement, made at the 67th Annual Meeting of the American Public Works Association is part of a nation-wide effort to honor these and other public works officials at the local, state and federal levels.

Others selected this year were: *David V. Auld*, director of sanitary engineering, government of the *District of Columbia*; *Henry A. Barnes*, commissioner of transit and traffic, *Baltimore, Md.*; *Hugh A. Benner*, director of public works, *Saginaw, Mich.*; *William A. Bugge*, director of highways, *State of Washington*; *Robert H. Hess*, director of water and sewage treatment, *Wichita, Kansas*; *David B. Lee*, director of sanitary engineering, *Florida state board of health, Jacksonville, Fla.*; *Eugene Maier*, director, department of public works and engineering, *Houston, Tex.*; *Jean L. Vincenz*, director of public works, *San Diego County, Cal.*, and *Brig. Gen. Alvin C. Welling*, commanding general, corps of engineers ballistic missile construction office, *Los Angeles, Cal.*

The announcement came during a special luncheon at the Hotel Leamington, Minneapolis, held to officially note the National Public Works Week observance, October 1-7. This is the second consecutive year that the American Public Works Association and Kiwanis International have co-sponsored the observance which is designed to increase the citizen's awareness of the importance of public works in the lives of the American people and to encourage young men to pursue careers in this field.

Each member of this year's "Top Ten" will receive a plaque commemorating his selection at ceremonies to be held during National Public Works Week.

The ILLINOIS ENGINEER is published monthly by the Illinois Society of Professional Engineers, Inc., at 714 Myers Building, Springfield, Illinois.

The Illinois Society of Professional Engineers is not responsible for statements made or opinions expressed in this publication.

Second-Class postage paid at Springfield, Illinois.

Subscription rates are \$2.00 per year in advance to members of the Illinois Society of Professional Engineers; \$4.00 per year in advance to non-members in U.S.A. and its possessions, Canada, and Mexico. Foreign \$6.00. Single copies 40c. Special issues \$1.00.

PRESIDENT'S COLUMN

Is communism a serious threat to the economy of our country? Many ramifications of this question have been propounded in the past few months. Commentators, after dinner speakers and the printed page are approaching the subject with increased frequency. This

is a question of vital importance to all of us. If there is a threat to our American way of life we must be cognizant of it. Any threat to our way of life demands our serious consideration.

Upon cursory examination of the subject one would conclude that communism is the greatest threat we face. Careful analysis would cause one to question this conclusion and seek other insidious underlying causes.

Such analysis reveals

that communism is but a new name for *pride, greed, lust for power* and *moral decadence*. These are the agents of destruction which demand our attention. They have been with us since the beginning of time and are the elements which fertilize atheistic philosophies such as communism.

History will confirm that the disintegration of the moral fibre of a nation has followed pride, greed and a lust for power. Babylon, Medo Persia, and Rome are prime examples of the destructive effect of moral decadence. If we desire to prevent the obliteration of our way of life we must combat these insidious factors which destroy from within.

What is the condition of our nation pertaining to these pernicious destructive forces? Are we vulnerable to their treacherous effect? It would appear we have been most susceptible.

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PRESIDENT'S COLUMN—(Con't from Page 1)

Many of our citizens feel we must be first and foremost always. We cannot permit any other nation to outdo us. First, biggest, best and greatest epitomize our vernacular. Have we lost our humility? Have we become a *proud* people?

On every hand we witness the prostitution of noble principles to obtain gain of fame or fortune. Has our *greed* made us a covetous people?

Attempts are made daily to build empires. We see this in industry. We see this in government. Unionism as we know it today can goad a relatively small group of our citizens into veritably crippling the economy of our nation. These things ought not to be. Has our *lust for power* blinded us to the consequences of such actions?

The ascending rate of crime, delinquency and corruption is well established. Do they not attest to the *moral decadence* of our time?

There is a dire need for penetrating introspection. Our founding forefathers established our nation upon the firm foundation of "Trust in God". We have prospered under this concept. We will continue to do so if we do not succumb to the subversion of these atheistic tendencies. Rather we must revert to the precepts of our founders. To reestablish these fundamental precepts of the faith of our fathers will provide an impregnable defense against atheistic communism.

The engineering profession has a significant effect upon the economic trends of our land. It is necessary that we recognize the importance of our position of leadership. It is imperative that we strive to provide leadership which will add strength to the moral fibre of our country.

We need have no fear of the infiltration of communism if we embrace an ethic which is predicated upon the Golden Rule.

We must, however, maintain a dedicated zeal and ardor for the principles which we hold dear. We cannot sit back in complacency. Constant vigilance is required to prevent further wallowing in the morass of atheistic communism if we desire to survive as a land of free people.

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CALIFORNIAN VISITS I.S.P.E.

(Right) ROBERT ROCCO of Garden Grove, California, Vice-President of the California Society of Professional Engineers (Southern California area) made a "vacation stop" at the ISPE headquarters in Springfield. He is shown conferring with Bob Newbury, ISPE's Executive Director. Mr. Rocco, representing a state possessing the largest Society growth potential in the U. S., was very interested in our IBM personnel accounting system, the ILLINOIS ENGINEER, and the new Illinois convention style featuring a House of Delegates.

After talking with Vice-President Rocco, Newbury said, "If California engineers would take their cue from Mr. Rocco and support their professional society with his vigor and enthusiasm, the California Society could well be on the threshold of its most explosive growth period in its history. The California Society has a potential membership of over 26,000."

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SUMMARY OF BOARD OF DIRECTION MEETING KANKAKEE, ILLINOIS, SEPT. 9, 1961

1. A hearing was held by the Board of Direction which resulted in the expulsion from the Society of a professional engineer. The officers of the Society are currently preparing a story on this case which will appear in the November issue of the Illinois Engineer.
2. ISPE Legislative Committee is to be requested to make a report on exactly where we stand in respect to the corporate practice bill passed in this last session of the General Assembly, and to make recommendations on what should be done prior to the next session.
3. The licensing of Landscape Architects, as attempted in the last General Assembly, was referred to the Interprofessional Relations Committee for study to see how this licensing Act would affect the interests of the professional engineer.
4. ISPE submitted the following recommendations for candidates for National office: Brandon H. Backlund of Omaha for NSPE President; Russell B. Allen for Treasurer; Frank W. Edwards for NSPE Central Area Vice-President; and L. D. Hudson for the NSPE Nominating Committee.
5. Publications Committee Chairman Art Kessell, called for more Chapter NEWS and PICTURES for the Illinois Engineer.
6. The matter of considering a Society life insurance program was dropped.
7. George Shanahan, Chairman, ISPE Constitution and Bylaws Committee, made a report resulting in the approval of the Constitution and Bylaws for the following chapters: Beverly, Bloomington Area, Peoria, Salt Creek and Ambraw.

VAN ZELST ELECTED CENCO DIRECTOR

CHICAGO, ILL.—Theodore W. Van Zelst, was elected a director of the Cenco Instruments Corporation at the firm's annual stockholders' meeting held recently in Chicago.

Van Zelst is president and founder of Soiltest, Inc., Chicago, the world's largest manufacturer of engineering test apparatus for research, educational and laboratory testing of soils, concrete, asphalt and construction materials. Soiltest has been a Cenco subsidiary since 1959.

Cenco Instruments Corp., a leading manufacturer of scientific instruments, has operating plants and facilities in 21 cities in the United States, Canada and Europe.

He is a graduate of Northwestern University and the University of California, Berkeley, and is a registered professional engineer member of ISPE.



Theodore W.
Van Zelst

PRESIDENT'S TASK FORCE HEARS ISPE TESTIMONY ON BEHALF OF ENGINEERS-IN-GOVERNMENT

On August 31 ISPE received notification from the U. S. Dept. of Labor that President John F. Kennedy had named a Task Force to study employee-management relations for Federal employees and that hearings were to be held in ten of America's leading cities. The Chicago hearing was scheduled for Sept. 21.

The Illinois Society of Professional Engineers made immediate request to the Department of Labor to be heard. ISPE President, Harold F. Sommerschield, conferred with NSPE officials who had appeared before a similar hearing in Washington on Sept. 14.

On September 20 word was received from the Department of Labor that ISPE would be heard by the Task Force. Louis A. Bacon, ISPE Vice-President, accompanied Mr. Sommerschield to the hearing, and the text of the testimony given by the ISPE President is printed below.

STATEMENT OF THE ILLINOIS SOCIETY OF PROFESSIONAL ENGINEERS ON EMPLOYEE-MANAGEMENT RELATIONS IN FEDERAL GOVERNMENT

September 21, 1961

Gentlemen:

My name is Harold F. Sommerschield. I am the President of the Illinois Society of Professional Engineers. Our Society is composed of twenty-three local chapters and over thirty six hundred professional engineer members from all branches of the engineering profession. We are affiliated with the National Society of Professional Engineers along with fifty-two other state-level societies.

In the announcement from the United States Department of Labor dated August 25, 1961, stating these Task Force hearings would be held, a number of suggested areas for comment were noted. We shall make comment on these suggested areas but before proceeding with our remarks pertaining to these specific points we would like to make a few qualifying general statements.

Since the inception of our Society we have been striving to improve employment practices in our profession. Our concern has been general in nature, encompassing Employee-Management relations in all branches of the profession. One area of interest has been government employed professional engineers.

We are following the lead of our national affiliate, the National Society of Professional Engineers, in the

organization of a Functional Section for Engineers in Government Practice. Through this functional group we hope to sense the needs of Engineers in Government so we can develop programs to meet these needs.

The development of a higher professional status for professional engineers is our primary interest. In this hearing we are particularly interested in the professional engineer engaged in government service. We believe there is a definite need for this. The ever expanding engineering activity of government makes it imperative that we attract engineers of the highest caliber into the Federal service. According to a recent study by the Civil Service Commission an increase of 65,000 engineers will be required in government service by 1963. The development of a favorable professional climate is necessary to encourage engineers to enter into and to remain a part of the government service.

Now, to comment on the specific topics suggested in the announcement, the following statements are presented. These statements apply particularly to professional engineering employees. The identifications used are the same as used in the Department of Labor announcement.

a. One of the basic requirements of a professional employee is that he be permitted to function in an environment which is conducive to freedom of thought and action. We firmly believe that an employee-management policy developed to accommodate the needs of Federal professional personnel must assure these freedoms. The right to join or to refuse to join an employees organization must be guaranteed.

By training and experience professional employees are qualified to exercise discretion and judgment. Because the product of a professional employee's effort is intellectual it is not possible to measure, limit or control his productivity as is done in the trades. To do so would be to mother mediocrity and produce irreparable damage to the economy of our nation. The need for the uninhibited freedom of choice is apparent.

b. We believe the proposed policy should assure an opportunity for organizations, composed entirely or partially of Federal employees, to offer opinions relative to personnel policy. We are not in favor of confining this opportunity to labor organizations or government employee unions. To do so would make it most difficult to develop and maintain qualified engineering staffs.

Presently we enjoy the privilege to express our views relative to engineering personnel matters on a highly professional basis. We desire to assure the continuation of this privilege.

c. We believe it is incompatible to combine professional employees and non-professional employees in the same organization. Professional associations are

more capable of discerning the needs of members in their respective professions. The provision that such associations be permitted to discuss subjects of interest with Federal officials should be included in the proposed policy.

We believe professional personnel should be granted the right to independently choose the organization by whom they shall be represented. Qualified professional engineers would resent representation by an organization composed primarily of non-professional employees. This would be true particularly where representation is determined upon the number of signed authorization cards obtained.

We favor independent secret ballot elections for professional personnel, separate and distinct from non-professional employees. This would provide professional employees the same freedom of choice granted to other professional employees under the provisions of the Taft Hartley Act. We believe professional government employees should be given the same consideration in the proposed policy.

d. Professional employees in government have common problems and interests which cut across agency boundaries. The respective professional associations afford the best means through which they can express their views. We believe the proposed policy should recognize this fact and assure that professional associations are permitted to discuss professional personnel problems with Federal officials at the level at which they exist.

e. The amount of space and time to be provided for government employee management meetings should be left to the discretion of officials of the appropriate agency. We believe a reasonable amount of time should be provided during the working hours to meet with representatives of professional groups.

f. We believe the scope of dealings should be clearly identified in the proposed policy and should be confined to subjects within the discretionary powers of Federal officials. Some subjects, such as, compensation schedules, leave policies and retirement and benefit plans, should be excluded and left solely to the powers of the Congress. Interpretation or implementation of Congressional enactments, however, may be appropriate subjects for discussion.

g. We believe that after all employee organizations or associations have been afforded an opportunity to present their opinions and due consideration has been given to their views Federal officials should have the final decision and authority to render judgment.

We do not believe understandings reached should be recorded as a formal agreement or contract. The exchange of correspondence to confirm understandings reached may be advisable.

i. We have previously suggested in items c and d that professional employees be permitted to express their views through a professional association.

There is no distinction made between supervisory and non supervisory members of a professional association. There is no division between an employee and a manager. *All* are members of *One* profession.

j. We hold the firm conviction that the proposed policy must consider the public interest and welfare first and foremost. No group can be permitted to exercise its influence to the jeopardy of either the government or the public.

We believe the public interest will be best served if professional personnel are represented by professional associations as we have suggested. This we believe because, if professional employees are granted the privilege of independent choice they will not be engulfed by the more numerous non professionals. They would govern their actions, not only by applicable Federal rules and regulations, but also, by the canons of ethics and rules for professional conduct of their respective professional association.

Referring specifically to professional engineers the following quotation is excerpted from the "Engineers Creed" to which we subscribe.

"I pledge: To place service before profit, the honor and standing of the profession before personal

advantage and the public welfare above all other considerations."

We strongly recommend that professional personnel in Federal employ be permitted under the proposed employee-management relations policy to conduct themselves as professionals.

This opportunity to express the opinions of the Illinois Society of Professional Engineers is appreciated. We trust the comments we have presented will prove to be of significant value to the Task Force. We would assure you of our desire to assist you in any way possible.

CHICAGO ENGINEERS IMPROVE PUBLIC SPEAKING ABILITIES

Recognizing the need for improvement of their public speaking abilities, Chicago Engineers have taken steps to become better speakers in public. Long stated as one of the short-comings of engineers, Chicago engineers now have an opportunity to do something about it under a proven format that has enabled over 250,000 men to develop their speaking abilities.

The Chicago Chapter of the Illinois Society of Professional Engineers has organized a Toastmasters Club which meets twice a month in the Chicago Loop. The club was presented with its charter from Toastmasters International at a special banquet on May 9, 1961. Officers installed at the banquet were: Louis S. Jacobs, President—Frank A. Koerner, Educational Vice President—Walter D. Linzing, Administrative Vice President—Walter A. Parsons, Secretary-Treasurer—Donald S. Robinson, Sergeant-At-Arms.

The program of the evening, in keeping with the Toastmaster format, was divided into two parts. The first was a series of two minute "table-topic" speeches designed to train the Engineer to think and speak on his feet extemporaneously. Diverse topics included, "Will the Cubs Win the Pennant?", and "My Most Inspiring Experience".

Prepared five minute speeches evaluated by a club member comprised the second part. Warren Culbertson delivered a speech titled, "Too Hot or Too Cold". Paul DeWitt told the saga of "Hot Dog—What a Story". Frank Koerner spoke on "The Five Most Important Words".

In addition, members are trained to serve as Master of Ceremonies, and as effective debaters and conference participants. In short, the Toastmaster format is to "Learn by Doing".



(L. to R.): Lou Jacobs, Donald Robinson, Frank Koerner, Walt Linzing—Chicago ISPE Toastmasters receive Charter from Toastmasters International.

LAND-GRANT COLLEGES AND UNIVERSITIES CELEBRATE CENTENNIAL

America's 68 Land-Grant colleges and universities—including the University of Illinois—this year will spark a celebration of the Centennial of the Act which brought them into being.

Much of the observance will focus on accomplishments and future promise of the Land-Grant institutions' colleges of engineering and engineering experiment stations, since these, with colleges of agriculture were key products of the Act.

The Land-Grant or "Morrill" Act drew heavily on the theories of an Illinois farmer-editor, Jonathan Baldwin Turner of Jacksonville, and was signed into law on July 2, 1862, by an Illinois President, Abraham Lincoln.

It was based on an idea—uniquely American—that higher education should not be the exclusive privilege of those of great family wealth, but should be available to all qualified young people.

No less important—and no less uniquely American—was its provision that higher education should teach the newer branches of learning (engineering and the like) as well as the traditional classical subjects which were the sole offerings of the older, sedate private colleges.

The Land-Grant Act provided federal lands to help establish and finance one or more public universities in each state. It called for the major objective to be, "without excluding other scientific and classical subjects, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts."

This emphasis on the "mechanic arts" led directly to the establishment of the University of Illinois College of Engineering, and to support of such other major sister institutions in the field as Massachusetts Institute of Technology, Georgia Tech, Purdue, Pennsylvania State University, Michigan State University, and most if not all of that host of important institutions of the "A and M" variety.

As the Land-Grant institutions enter the year-long observance of their 100th anniversary, they number less than four per cent of the nation's colleges. Yet they enroll about 20 per cent of the nation's undergraduates and grant nearly 40 per cent of all doctoral degrees in every field of study. In engineering, they grant over 50 per cent of all doctoral degrees.

Further testifying to the quality of teaching, research, and service by these institutions is the fact that 20 of 38 living American Nobel laureates who went to college in this country have earned degrees from Land-Grant institutions.

They train almost half of all regular and reserve officers entering the armed forces through the military training programs of civilian institutions.

The value to the American people of Land-Grant research contributions alone exceeds by many times the

total amount expended on these colleges since they came into being.

Official beginning of the Land-Grant Centennial observance will be the Centennial convocation Nov. 12-16, 1961, in Kansas City, Mo. At that time, an "outside" expert—i.e., an educator not directly connected with a Land-Grant institution, and, therefore, able to approach his study with an unbiased mind—will report on his "depth" assessment of the calibre of the work being done in that area of teaching and research.

Assessment of work being done in the Land-Grant colleges and of engineering will be made by Dean Frederick Lindvall, California Institute of Technology; that in engineering extension, President Richard G. Folsom, Rensselaer Polytechnic Institute; and that in engineering research, Vice President Carl C. Chambers, University of Pennsylvania.

Even before these assessments are made—and whether or not they take accomplishments of individual institutions into consideration—citizens of Illinois can point with pride at the major achievements within the University of Illinois College of Engineering and Engineering Experiment Station.

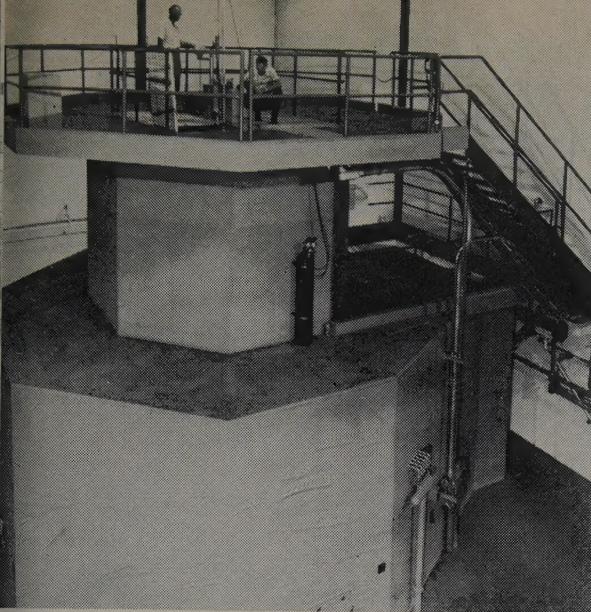
In its second year, 1869, the University offered its first engineering course—a class in civil engineering. The first building devoted primarily to engineering, a former mule stable at the corner of Wright Street and Springfield Avenue, was put into use in 1870. The following year engineering got its first permanent building, a small affair occupied by mechanical engineering, architecture, and military science. Today the College of Engineering, which is one of the foremost in the world, has an enrollment of about 4,000 students, an academic and research staff of about a thousand.

Illinois pioneered in 1908 by establishing the nation's first Engineering Experiment Station. In its early years, the Station staff discovered uses for large deposits of Illinois clay which had been thought to have no economic value. In its very first year, it began experiments dealing with concrete and its reinforcement.

In 1913, Prof. Jakob Kunz made the first modern sensitive photoelectric cell. In 1922, using such a cell, Prof. J. T. Tykociner devised and first demonstrated modern sound-on-film motion pictures. From sound movies, Tykociner turned to the study of ultra-short radio waves, a field in which he made notable contributions and foreshadowed radar.

In 1924, the world's first house specially for home heating research was built at the campus, providing a new type of laboratory for research in which Illinois has led.

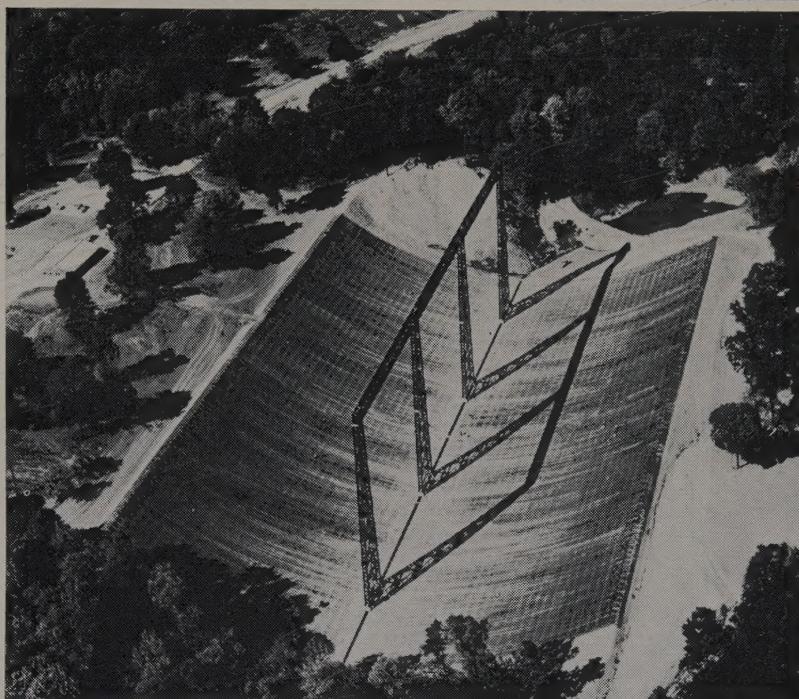
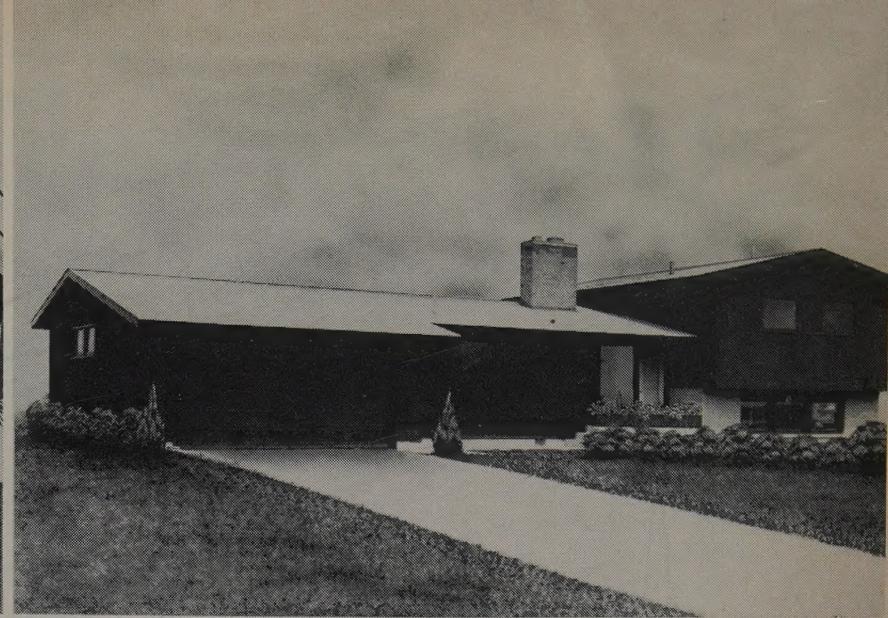
Working at the University—first as a young graduate student, later as a full-fledge member of the faculty—Prof. D. W. Kerst in 1940 invented the betatron—an "atom-smasher" for physics research, and high-energy x-ray source for medicine and industry. The first betatron entirely for medical use was installed in 1949 on the University's medical campus; the world's largest betatron, 340-million volts, went into operation



UPPER LEFT: The U. of I. TRIGA nuclear reactor recently allowed to rise to 250 million watts for training purposes.

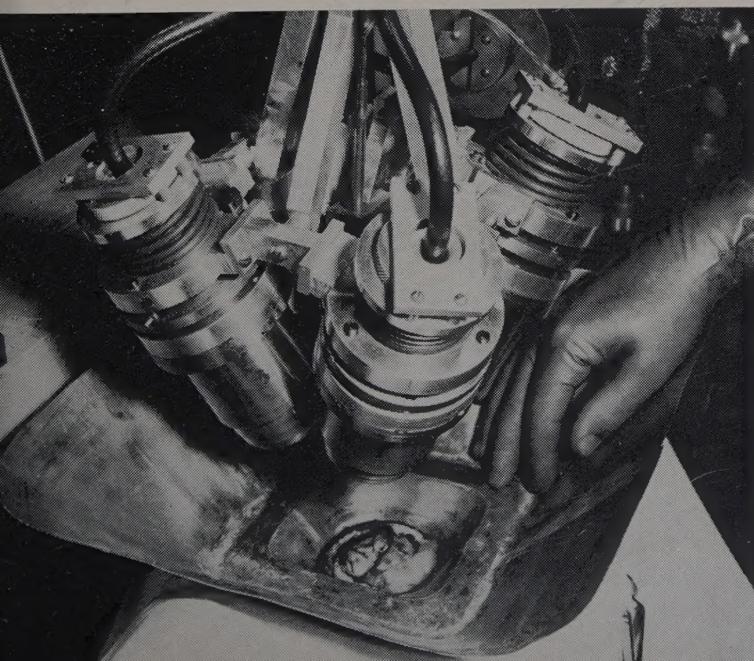
MIDDLE LEFT: U. of I. radio telescope for studying stars of range of even the powerful telescope.

LOWER LEFT: Neurology has a new tool—a level focused ultrasonic beam. A section in the EEG department devotes its time to work in this and similar areas.



UPPER RIGHT: The I-B-R Research Homes at the University of Illinois are used to study steam and hot water heating equipment. Home heating research has been conducted at the University since 1918.

LOWER RIGHT: The testing of railroad rails, wheels, brakes, etc. for many years has contributed to railway safety in the U. S. The study of failures on railroad rails cost \$692,666 over a period of years; it is estimated that the findings have so far saved American railroads \$102,000,000 and will save an additional \$9,000,000 every year.



in 1950 at Urbana-Champaign.

An important and continuing facet of engineering research at Illinois has dealt with testing of railroad rails, wheels, brakes, etc. The study of failures on railroad rails cost \$692,666 over a period of many years—the resulting findings, have, so far, saved American railroads more than \$102,000,000, and will save an additional \$9,000,000 each year. More important than the dollar savings are the savings in human life and the prevention of injuries which would have resulted from accidents had the failures not been prevented.

A current outstanding project, which began in the late '50s, involves reception of radar bounced from the moon from Fort Monmouth, N. J. Purpose is investigation of phenomena in the ionosphere, a layer of the upper atmosphere of great importance in radio communication. This project, using a 28-foot parabolic "moonbeam antenna," is directed by Prof. Harold Webb.

But accomplishments within the U. of I. College of Engineering would fill many volumes of the finest print.

Within the past year or two, for example, a huge radio-telescope was built in a ravine near Danville, to protect it from man-made radio or traffic interference. This federally-financed project has as its purpose study of signals from radio sources billions of light years away in space, seeking better understanding of them and the universe.

A TRIGA Mark II, training and research nuclear reactor, was built and dedicated within the year just closed, and "PLATO," a computer-operated teaching machine, was announced to the public.

So research goes on, and teaching. Third area of emphasis in the Land-Grant College of Engineering—engineering extension—also received its full share of emphasis at the University of Illinois.

Working with the U. of I. Division of University Extension, the College of Engineering sends its faculty throughout the state for extramural classes of professional and post-graduate level. In other classes, graduate engineers "bone up" in refresher courses that prepare them to take the state examination for the Professional Engineers' License.

Special groups of engineers come to the campus each year by the hundreds to participate in the many conferences and short courses, again arranged by the College of Engineering and Division of University Extension, that are planned to meet their special needs.

As the Land-Grant Centennial draws near, the University of Illinois College of Engineering takes special pride in its cooperative research with outside departments. It has created a special unit to help researches throughout the University solve problems of measurement. When measuring instruments are not available, the engineers help design and develop them. Radio astronomy, in another instance has brought together as-

NSPE CAN and DOES ACT QUICKLY!

By FRANK W. EDWARDS, NSPE Director

On Tuesday morning, September 19, I received a copy of a notice issued by the Veterans Administration Hospital, Iowa City, calling for bids for an engineering study to determine the most efficient and direct method

of modifying the electrical distribution system for the hospital. Bids were to be received and opened at 2:00 p.m. Friday, September 22.

The copy of the bid notice was sent to NSPE headquarters via Air Mail with a note to Milt Lunch, Executive Assistant, expressing the hope he could handle the case quickly. He undoubtedly received this material Wednesday, September 20.

The results of prompt action are indicated in the following telegram which was received in my office about noon, September 21.

"DIRECTOR, ENGINEERING SERVICES, DEPARTMENT OF MEDICINE AND SURGERY, VA, CALLING IOWA CITY VA HOSPITAL TODAY INSTRUCTING THEM WITHDRAW INVITATION FOR BIDS AND NEGOTIATE CONTRACT UNDER STANDARD VA POLICY PROHIBITING COMPETITIVE BIDDING FOR PROFESSIONAL SERVICES. THANKS FOR CALLING TO OUR ATTENTION

MILTON F. LUNCH, NSPE"

Literally hundreds of problems are solved satisfactorily by NSPE and its affiliate societies and chapters. This is only one such problem.

tronomy and electrical engineering; biophysical research represents an overlapping of biology, psychology, physics, and electrical engineering; cooperative research is even being conducted by specialists in engineering and music.

For the University of Illinois and its College of Engineering are proud to be among the 68 institutions recently hailed by President John F. Kennedy in an proclamation preliminary to the Land-Grant Centennial Observance.

The President called the Land-Grant system of higher education "the Nation's largest single source of trained and educated manpower (which) now contributes more than half of the Nation's trained scientists," and urged that all agencies join in the Centennial celebration "to the end that the occasion may serve to commemorate the unparalleled opportunities for higher education provided by these publicly supported institutions and their efforts through teaching, research, and service to improve the economic, social, and cultural lives of peoples of this Nation and other Nations."

CENTRAL ZONE REPORT
ON
ENGINEERING FACULTY REGISTRATION

Report of Research Committee, Central Zone, National Council of State Boards of Engineering Examiners, to determine the proportion of Engineering faculty members at the accredited Universities of the Central Zone who are Registered Professional Engineers.

Illinois

State in which University is Located	Total Number of Professors or Instructors	Number Registered
Bradley University	19	11
Northwestern University	63	29
University of Illinois	490	*
Illinois Institute of Technology	**	

Indiana

Purdue University	388	124
Valparaiso University	12	0
University of Notre Dame	53	23
Rose Polytechnic Institute	21	10 ⁽¹⁾

Iowa

State University of Iowa	53	19
Iowa State University of Science & Technology	—216	— 60
—Data not accurate—taken from 1959 Directory		

Kansas

University of Wichita	**	
University of Kansas	96	50
Kansas State University of Agric. & Applied Science	114	58

Kentucky			
University of Louisville	21	6	
University of Kentucky	57	38	
Michigan			
Wayne State University	19	42 ⁽²⁾	
Michigan College of Mining and Technology	**	*	
University of Michigan	*	*	
Michigan State University of Agric. & Applied Science	101	*	
University of Detroit	57	25	
Minnesota			
University of Minnesota			
College of Engineering	107	45	
College of Agriculture	11	7	
Missouri			
Washington University	52	28	
Saint Louis University	22	9	
Missouri School of Mines and Metallurgy	153	44	
University of Missouri	62	25	
Nebraska			
University of Nebraska	55	34	
North Dakota			
North Dakota State College	49	21	
University of North Dakota	35	26	
Ohio			
Antioch College	3	3	
Youngstown University	21	18 ⁽³⁾	
Finn College	**		
Case Institute of Technology	**		
Ohio Northern University	11	11	
Ohio State University	196	101	
Ohio University	30	27 ⁽⁴⁾	
University of Akron	15	11	
University of Toledo	26	11	
University of Dayton	27	15	
University of Cincinnati	54	32	

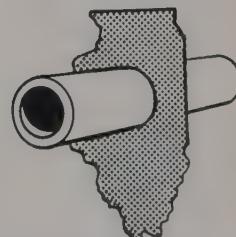
(Continued on Next Page)

CONCRETE PIPE-O-GRAM

A SEWER MUST HOLD SEWAGE LEAKAGE AND GROUND WATER INFILTRATION TO AN ABSOLUTE MINIMUM. NOW, THANKS TO MODERN CONCRETE PIPE JOINTING MATERIALS AND CONSTRUCTION METHODS, WATERTIGHT JOINTS ARE EASILY ATTAINABLE.

ILLINOIS CONCRETE PIPE ASSOCIATION

221 North LaSalle Street, Chicago 1, Illinois
 Phone DEarborn 2-3908



South Dakota

South Dakota State College of Agric. & Mechanic Arts	74	13
South Dakota School of Mines and Technology	28	10

Wisconsin

Marquette University	42	
University of Wisconsin	176	70

*No data available

**No reply

(1) 10 & 4 E-in-T

(2) 45 Reg. or E-in-T

(3) 18 Reg. or E-in-T

(4) 27 Reg., 3 of whom are E-in-T

The request for the data was submitted to the forty-three accredited Universities located in the Central Zone on July 6, 1961. Up to the date of this report, replies were received from thirty-eight Universities. Replies to the Committee's inquiry were very gratifying especially due to the late date at which our request was submitted to the Deans of the Universities located in the Central Zone. The Committee wishes to express its appreciation for the prompt replies.

Respectfully submitted,
Research Committee, Central Zone
Arnold M. Steffes, Chairman
Walter E. Bryan
C. J. Posey
A. L. Bavone
W. A. Piper

Dated: August 10, 1961

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Save time and money, specify STREATOR Amvit plastic joint pipe. Lays as fast as you can open the trench. Absolutely root-proof and infiltration-proof.

*Over 3 miles of
STREATOR CLAY PIPE
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City engineers have specified the installation of over 17,000 feet of vitrified clay pipe...with the trouble-free, infiltration-proof Amvit plastic joint...at Chicago's O'Hare Field. The selection was in keeping with the city's determination that the airport's facilities are the best that can be obtained.

Engineers and municipal officials get better values with STREATOR clay pipe because:

it is the pipe with the 50-year guarantee
It will not rust, corrode or decay, is impervious to action of alkalis, sewage, sewer gases, ground waters and industrial wastes.

it makes buying oversize pipe unnecessary
STREATOR clay pipe with the Amvit plastic joint is completely infiltration-proof, making it unnecessary to allow extra size for seepage.

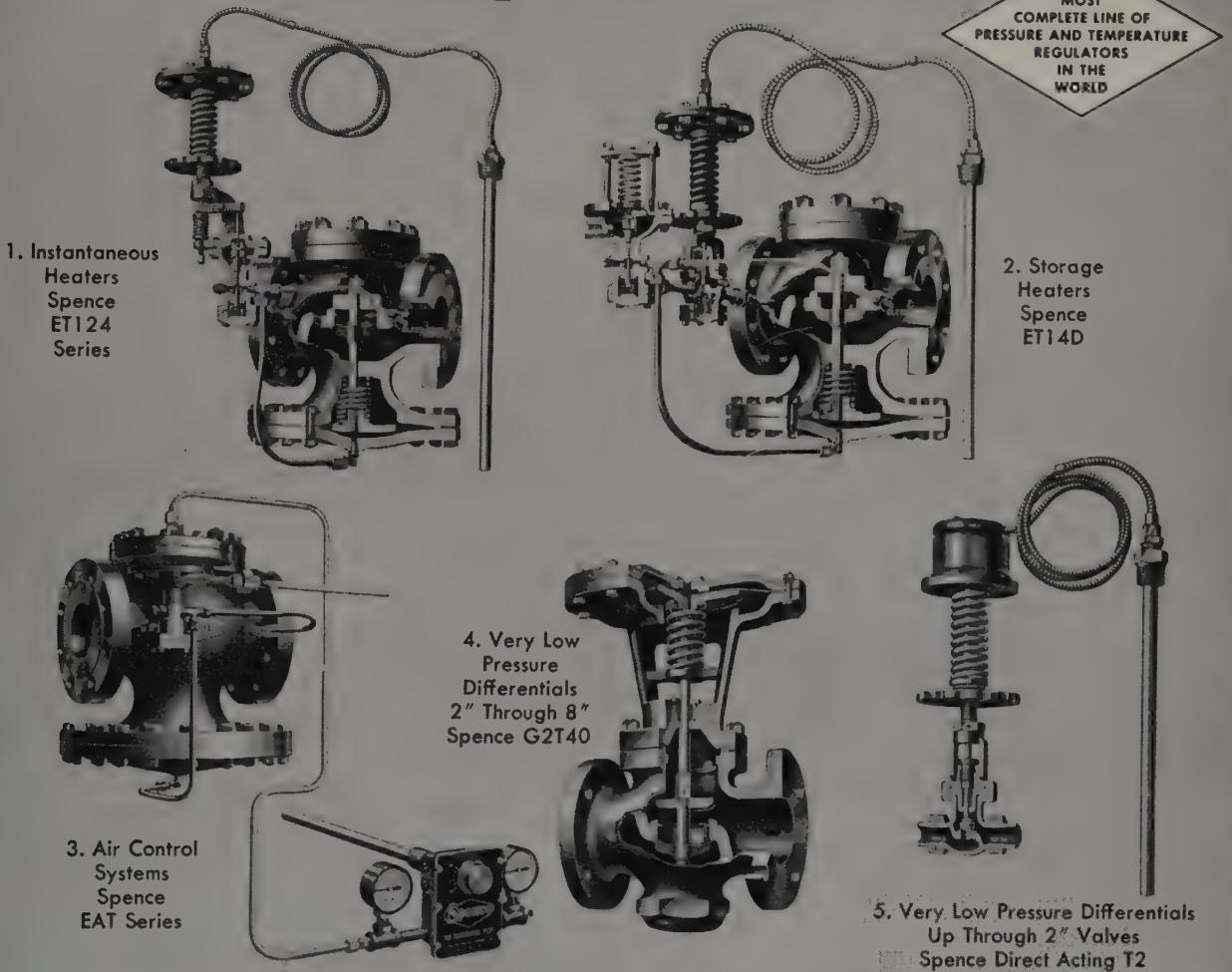
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Stocks of all sizes, 4" through 30", are never more than overnight from your job to speed your progress, save time and labor.

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How to Select Automatic Regulating Valves For Temperature Control



During the past year, our field representatives have reported many cases of improperly, and uneconomically, applied temperature regulators. To help you avoid some of these costly mistakes, here are a few tips on selecting the most effective and economical temperature regulating valves for your applications.

1. Instantaneous heaters require a special action for close temperature control and freedom from hunting. In the Spence ET124 series, steam pressure is modulated according to temperature (demand) and is automatically regulated at any pressure established by the demand.
2. Storage heaters, on the other hand, are more economically controlled by the Spence ET14D, which in-

cludes a simple temperature-actuated pilot that opens and closes the main valve to maintain a constant temperature.

3. Air control systems can now have a $\pm 5^{\circ}\text{F}$ control accuracy under wide and instantaneous load swings with the Spence EAT regulator. Engineers report savings of up to 50% in installed costs with this recently developed Spence cascade system when it has been used in place of conventional instrumentation.
4. For the combination of very low pressure differentials and air or water control, Spence recommends Type G2T40. This single seated valve provides fast, positive response in 2" through 8" valves. Double seat Type G22 is also available in 10" through 12".
5. When very low pressure differential is encountered with valves of 2" or less, the Spence direct operated T2 is recommended. The sensitive vapor tension thermostat responds quickly to small changes in bulb temperature for continuous, accurate control.

In this brief description of industrial process and heating temperature control, we have given a few important tips in proper regulator selection. If you would like more detailed information on these control applications, write for the new Spence Temperature Control Bulletin IV 1014.

SE-180

SPENCE ENGINEERING COMPANY, INC.
Walden 1, N. Y.
Paulsen Spence, P. E., President

I. S. P. E. - N. S. P. E.

"A PROFESSIONAL INVESTMENT"

If you were reading a Prospectus on I. S. P. E.-N. S. P. E., I'm certain that it would read something like this: "Illinois Society of Professional Engineers Inc., a corporation of the State of Illinois, founded on



Manuel Garcia,
Vice-President

February 10, 1886, and later became affiliated with the National Society of Professional Engineers in 1934. This organization is made up of Registered Professional Engineers, Registered Structural Engineers, Registered Land Surveyors, and Engineers - in - Training (EIT)."

The Prospectus would further state: "The Illinois Society of Professional Engineers is dedicated to promoting the

public welfare; to advancing the professional, social and economic welfare of the professional engineers; and to the belief that the individual member of our Society makes the policies."

There are many other items that such a Prospectus would also contain, such as the fact that our Society is a grass-roots organization, offering three-level representation, at the local, state, and national levels—a sound financial report and operating within a balanced budget—a listing of its current officers; 23 chapters within the state, etc.

However, the readers of such a Prospectus, looking for a sound Professional Investment, would reserve their opinion about the Society, until they reviewed the membership situation, past and present and to the Society's potential growth, both short and long terms.

Further investigations by anyone interested in our Society would find that it is highly recommended by Executives and Engineers in Industry, Government, Private Practice and in Education.

In short, what I have been trying to say is that before one makes an investment—financial or professional—it is important that all the facts be known. We have the facts given in a brochure recently prepared by our membership committee and the state headquarters. The brochure also lists the professional activities of our Society.

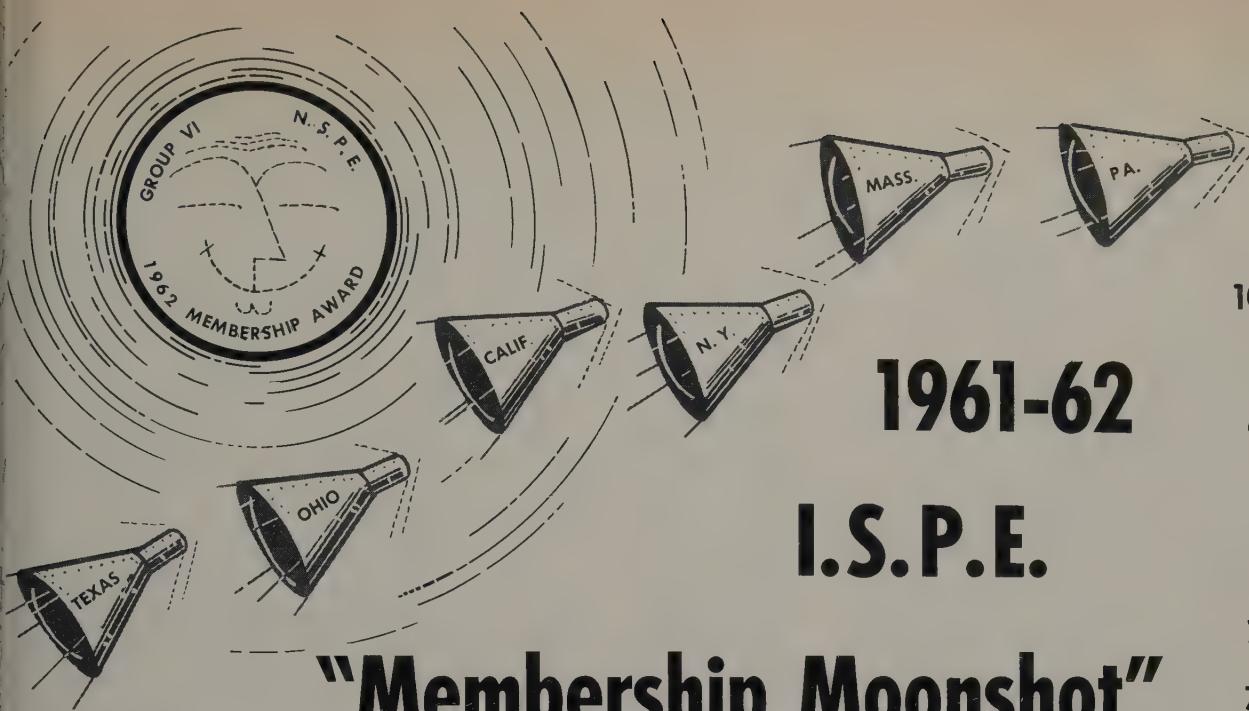
Shortly after Labor Day, this brochure, together with a personalized membership application blank, was sent to 11,081 prospective members—those eligible for National, or P. E. membership. The punch line of the brochure raised the question, "ARE YOU LOOKING FOR A PROFESSIONAL INVESTMENT WITH GROWTH AND INCREASING VALUE?" This was

the opening shot in the Society's attempt to enroll qualified engineers into its membership. Many of the engineers to whom this pamphlet was sent have been looking for such a "PROFESSIONAL INVESTMENT," but to date had not found one. There are, no doubt, many reasons why they have not succeeded, but rather than delve into this problem, let us look into the matter as to how they may now become better informed and interested in becoming members of our Society. It is true that these prospects for membership now have certain information, however, we as individual members are the best representatives and, if you will permit the term, salesmen for I.S.P.E.-N.S.P.E. Make it a point to obtain from your chapter membership chairman a list of friends, associates and neighbors who have been sent this brochure and who are eligible and seek them out. Solicit their help in making our organization the spokesman for all engineers. In fact, it would be advisable to have your chapter membership chairman read the list of names of prospects in your area at your next chapter meeting so the members will be able to know who the prospects are and subsequently contact them. Use all mediums of communications in contacting these prospects, viz, telephone and letter writing. If your local radio and T. V. stations have public service announcement time, avail yourselves of this time. However, nothing, in my opinion, is better than personal contact. An individual full of enthusiasm, backed up by factual data such as the brochure mentioned above, together with the August edition of The Illinois Engineer, has all the ammunition required to get a member. Prove to the prospect that I.S.P.E. - N.S.P.E. is a "PROFESSIONAL INVESTMENT," an investment that he can ill-afford to be without!

MANUEL GARCIA



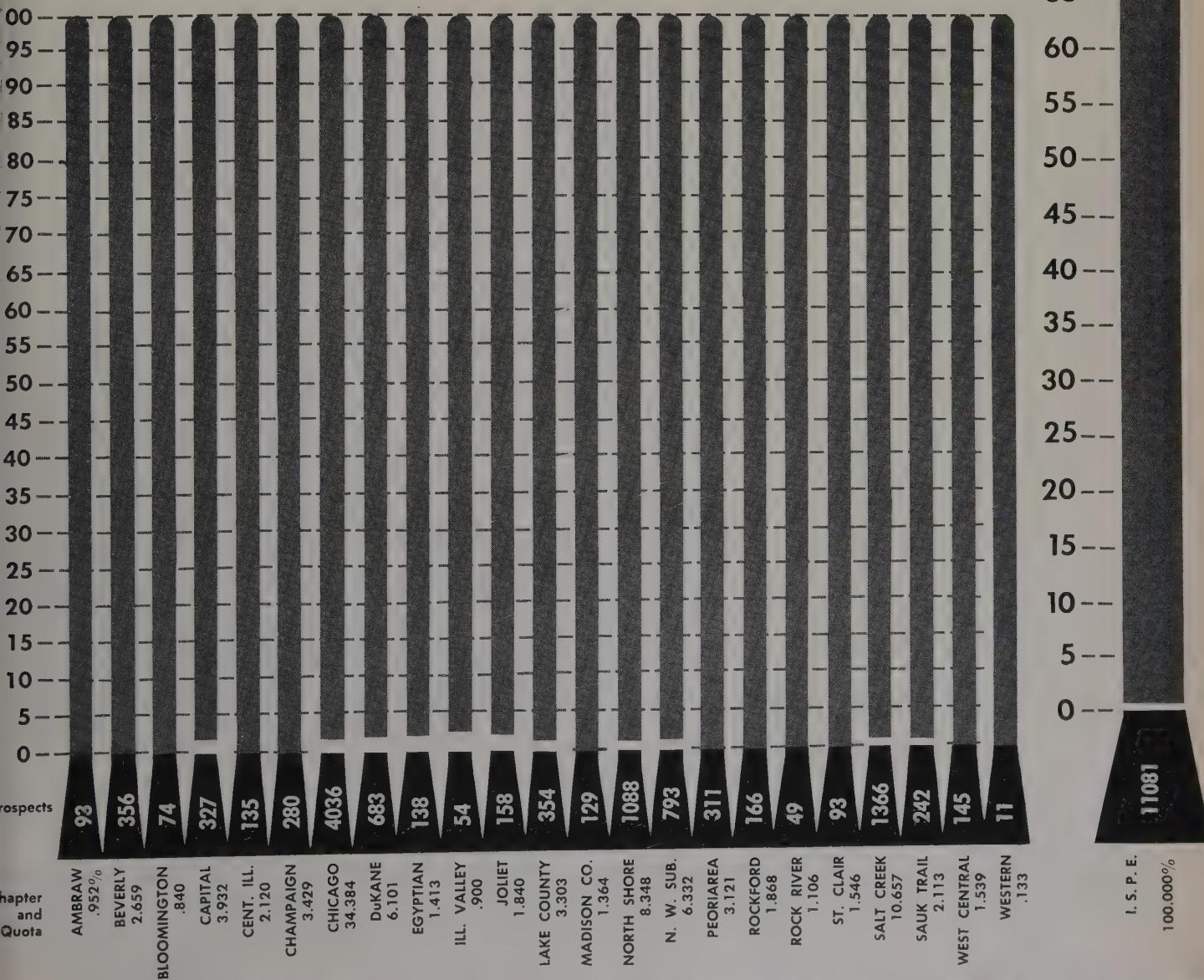
KANKAKEE—SEPT. 8: Northeastern Illinois Chapter Membership Chairmen met to organize Chapter follow-up campaigns after more than 11,000 applications had been mailed to potential members. Seated L to R: Wayne Madden, Joliet; Gerald Marks, ISPE Membership Chairman; Wm. Werninghaus, Chicago; H. F. Sommerschield, ISPE President. Standing L to R: Sanger Westphal, Joliet President; Howard Perrault, Sauk Trail; Mary Watt, ISPE office manager; David Welch, member of NW Suburban membership committee; George Small and Delmar Groff of Kankakee.



1961-62

I.S.P.E.

"Membership Moonshot"



NEW MEMBERS ARE ROCKET BOOSTERS

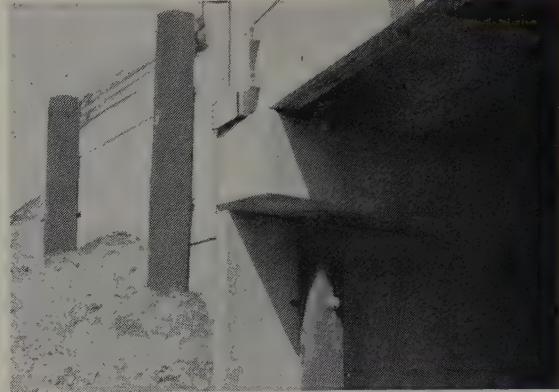
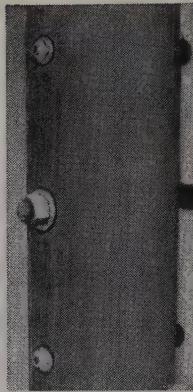
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**RECOMMEND PRECAST BACK-UP PLANKS
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▲ Abutment showing precast caps and abutment back-up planks with Nelsen deck slabs. The large diameter bolts extend to precast deadman.

...at surprisingly low costs.

Specify the life expectancy of poured abutments with Nelsen precast back-up and wing planks . . . custom made for variable depths and pile spacing.

Nelsen Precast Bridge Units and Features...

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Span Lengths . . . 12' to 40' in standard precast lengths.

Loadings . . . H15-S12-44 and H20-S16-44 with or without wearing surface.

Tolerances . . . depth $\frac{1}{8}$ "; length $\frac{1}{4}$ " in 10'.

Posts . . . meet or exceed AASHO requirements.

Precast Caps . . . dowel holes, crowns, and leveling screws are provided for use with all types of precast caps.

Transverse Bridge Slabs . . . precast complete with crowns and leveling screws . . . for long span structures and heavy-duty temporary bridges.



▲ View under completed bridge showing back-up slabs, piling, precast caps, and precast deck spans.



▲ Completed bridge. Details on request.

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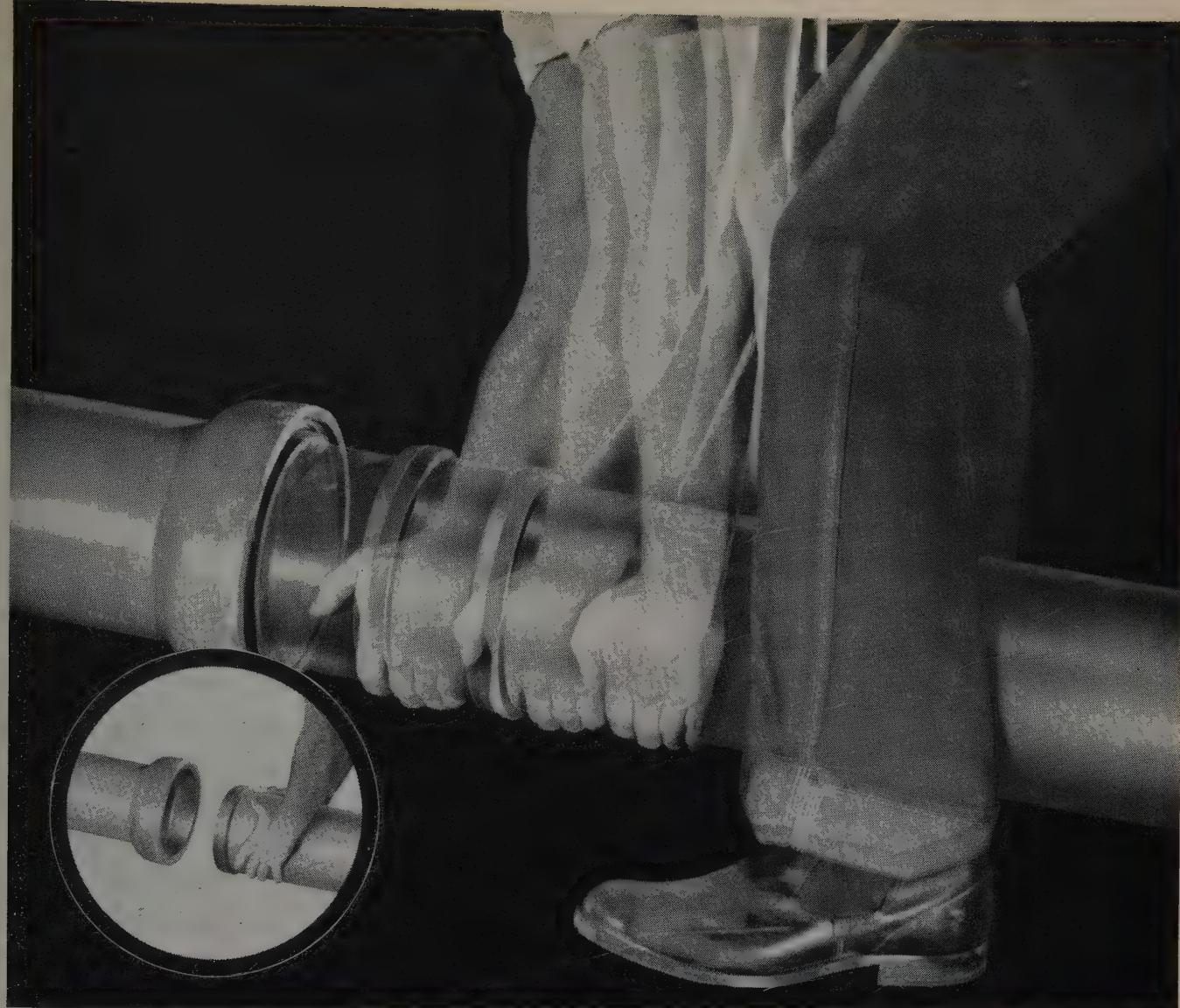
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A firm push...a sewage-tight joint

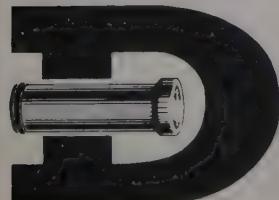
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Write today and find out why more and more communities are building sewers with Dickey Coupling/Pipe. Just ask for Coupling Bulletin 718A.

Providing improved sanitation for better living



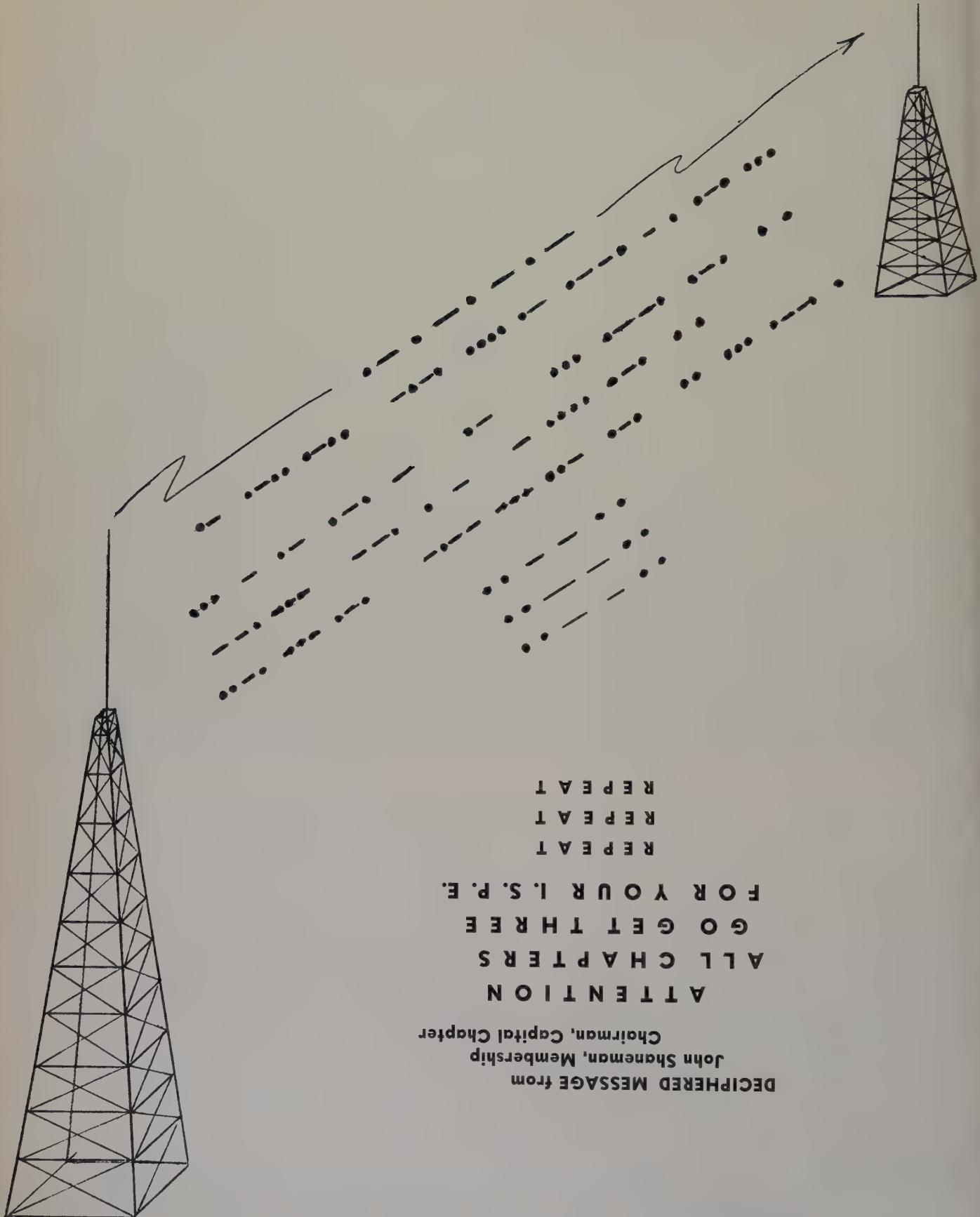
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Burton, Richard M., Browning (EIT-IM)

Haedike, Ronald P., 506 W. Monroe, Springfield (EIT-IM)

Massaro, Anthony V., 1505 Pennsylvania Ave., Springfield (N)

Melville, Victor J., R. R. 1, Farmington (EIT-IM)

CENTRAL ILLINOIS

Schnake, John W., 340 S. Dennis, Decatur (N-IM)

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Baker, Kenneth L., 1605 W. Healey, Champaign (EIT-IM)

Brush, Bruce T., 1012 Eastview Ave., Danville (EIT)

Eversole, McClellan, 411 S. Central, Paris (EIT-IM)

Gain, Brian R., 372 Forbes M.R.H., Champaign (Student)

Goluba, Raymond W., 207 S. McKinley, Champaign (EIT-IM)

Lawyer, William H., 1902 Diana, Champaign (EIT-IM)

Manero, Luis G., 211 W. Stanae, Champaign (NAT-IM)

Price, Ronald E., 4 Fisher's Court, Urbana (EIT-IM)

Vonderohe, Robert H., 507 W. Church, Champaign (EIT-IM)

CHICAGO

Abramowski, Harold J., 1614 S. 57th Ct., Cicero (EIT-IM)

Anderson, Carl O., 900 N. Rush St., Chicago 11 (NAT)

Bablitz, William R., 10809 S. Millard, Chicago (NAT-IM)

Brncic, Donald J., 3215 S. Ridgeway Ave., Chicago (EIT-IM)

Christensen, James T., 155 W. 69th St., Clarendon Hills (NAT-IM)

Deckert, John H., 253 E. Delaware, Chicago (NAT)

Dolan, Francis A., 4139 12th N. E., Seattle, Wash. (EIT-IM)

D'Orazio, Harold E., 5901 N. Naper, Chicago 31 (EIT-IM)

Galloway, Robert M., 5428 W. 99th Place, Oak Lawn (NAT-IM)

Gish, David Barry, 3715 141st St. S., Seattle 88, Wash. (EIT-IM)

Golick, A. Frank, 185 E. Chestnut, Chicago (NAT)

Greeney, William J., 11341 Longwoor, Chicago 43 (EIT-IM)

Helm, James M., 9448 Drake, Skokie (EIT-IM)

Honey, Haycraft E., 376 Nuttall Rd., Riverside (NAT)

Kramp, Robert C., 6152 S. Komensky, Chicago (EIT-IM)

Lebow, Jeremiah P., 1326 Dartmouth, Deerfield (NAT)

Loeffl, Michael Wm., 5146 N. Kildare, Chicago 30 (EIT-IM)

MacDonald, Alister, 5858 Sheridan Dr., Chicago 40 (NAT-IM)

Marner, Paul B., 2206 Beechwood Ave., Wilmette (NAT)

Massoth, Wm. John, 10016 S. Kilbourn Ave., Oak Lawn (NAT-IM)

Milewski, Sylvester, 5156 W. Parker, Chicago (EIT-IM)

Miller, Robert Chas., 5715 N. Merrimac, Chicago (EIT-IM)

Novak, Vladimir J., 3847 S. Euclid, Berwyn (NAT)

Noyszewski, Miroslaw, 1753 N. Albany, Chicago 47 (NAT-IM)

Preissner, Edgar D., 2531 W. Division, Chicago (EIT-IM)

Quinnell, Frank A., 2113 Mandel Ave., Westchester (NAT)

Reidenbach, Dennis R., 3116 N. Christiana, Chicago 18 (EIT-IM)

Rice, Paul F., 2619 Eastwood Ave., Evanston (NAT)

Rohaly, Joseph S., 9232 S. Avalon, Chicago (EIT-IM)

Roth, Philip J., 2044 W. Farragut, Chicago (EIT-IM)

Schaefer, James W., 1420 Park Ridge Blvd., Park Ridge (NAT)

Schumacher, Leo J., 3314 Wenonah, Berwyn (NAT)

Scott, Russell W., 1620 W. Columbia Ave., Chicago (EIT-IM)

Senew, Michael Wm., 1500 Kaywood Lane, Glenview (NAT)

Shanks, Thomas K., 11028 Esmond St., Chicago 43 (NAT)

Stewart, Paul B., 3950 N. Lake Shore, Chicago (NAT)

Vargas, David J., 1860 Pine Rd., Homewood (EIT)

Walford, Robert B., 11160 Westminster, Los Angeles 34, Calif. (EIT-IM)

Ward, Corliss C., 10511 S. Sangamon St., Chicago 43 (EIT-IM)

Weinberg, Jerome, 5107 Adams St., Chicago (NAT)

Wolf, Ludwig, Jr., 2901 Byron, Chicago (EIT-IM)

Zelisko, Steve, 2145 W. 54th Place, Chicago (NAT)

DUKANE

Berg, Richard Leon, Route 1, Esmond (EIT-IM)

Geti, Nicholas R., 1704 W. 100th St., Chicago (EIT-IM)

Hofflander, Tymen Wm., 402 Orchard St., Elgin (EIT-IM)

Murphy, Samuel M., Route 1, Box 646, Batavia (NAT-IM)

Timm, George D., 122 Geronimo, Roselle (NAT)

Vivoda, John Vincent, Jr., 632 Craig Place, Addison (NAT-IM)

Wight, George, 446 E. Main, Barrington (NAT)

EGYPTIAN

Bailey, Allen Benjamin, 305 Blackburn, DuQuoin (NAT)

Brenning, Eugene D., 900 E. Park, Carbondale (EIT)

Clarida, Harold G., 705 E. Main, Christopher (EIT)

Eisenhauser, Eugene F., 608 N. Springer, Carbondale (EIT)

Harris, Roy K., Jr., Route 2, Carbondale (EIT-IM)

Licata, Jack, 755 N. Lake Drive, DuQuoin (NAT)

Mallin, John George, 602 Metropolis St., Metropolis (NAT-IM)

Mitchell, Henry, 600 N. Carico Street, Carbondale (State to NAT)

Rice, George A., Jr., 2012 Greenview, Metropolis (NAT-IM)

Zieba, Bobby Gene, 821 W. Walnut, Carbondale (EIT)

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Rynke, Ronald Francis, 1127 Lincoln, Peru (EIT-IM)

Safranski, Joseph E., Route 2, Granville (EIT-IM)

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Claassen, Norman Dean, 921 Jasper, Joliet (EIT-IM)

Foley, Frank W., 1004 Murphy Drive, Joliet (NAT)

Francis, Robert M., Wildwood Lane, Joliet (NAT)

Johnston, Willard F., 718 Cowles Ave., Joliet (EIT-IM)

McCluskey, Gordon M., 565 E. Division, Lockport (EIT-IM)

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Anderson, Edward M., 594 N. Western Ave., Lake Forest (NAT-IM)

McBride, Charles A., Jr., 2413 E. Dunlay Ct., Waukegan (EIT-IM)

Scholes, Fraser, 455 E. Deerpath, Lake Forest (NAT)

Sobolewski, Louis A., 311 E. Lake Shore Drive, Round Lake (NAT-IM)

Vlasak, Floyd Joseph, 409 Algonquin Drive, Wildwood (EIT-IM)

MADISON COUNTY

Bacus, Gerald R., 210 E. Courtland St., Philadelphia, Pa., (EIT-IM)

Harris, William F., Route 2, Litchfield (EIT-IM)

NORTH SHORE

Ellis, Paul James, 8310 Lincoln Ave., Skokie (EIT-IM)

Hartung, Philip H., 1570 Oak St., Evanston (EIT-IM)

Hermann, Paul Chas., 1520 Washington, Evanston (EIT-IM)

Janner, Michael James, 8548 Normal Ave., Niles (NAT-IM)

Keller, Donald H., 516 Longfellow Ave., Deerfield (NAT-IM)

Mertz, Donald K., 5020 Normandale Ct., Edina, Minn. (EIT-IM)

Miller, Loren Chas., 315 Auburn Ave., Winnetka (NAT)

NORTHWEST SUBURBAN

Bonell, Dean Wayland, 2804 Grouse Ct., Rolling Meadows (NAT-IM)

Czaruk, Michael A., 325 Wilkins Drive, Des Plaines (NAT-IM)

Dorrell, Robert Francis, 1664 Van Buren, Des Plaines (NAT)

Ikenn, Ian Ralph, 8952 Samoset Trail, Skokie (NAT)

Krawetz, Walter, 32 W. Rosemont Ave., Roselle (NAT-IM)

Meyer, Max Bernard, 229 Wisner, Park Ridge (NAT)

Van Riper, Wilbur H., Jr., 809 S. School St., Mt. Prospect (EIT) (Reinstate)

Verlo, Clayton C., 1745 Wicke, Des Plaines (NAT-IM)

Wilberg, Roger B., 10215 W. Chestnut, Franklin Park (EIT-IM)

PEORIA AREA

Haynes, William H., 1201 N. Douglas, Peoria (EIT-IM)

Hieser, Michael Wm., Hopedale (EIT-IM)

March, Darrell D., 709 N. Main, Washington (EIT-IM)

Webber, Philip S., 408 Tyler, Morton (NAT-IM)

Westapher, Bernard T., 1008 Purtscher Drive, Peoria (EIT-IM)

White, Mitchell M., 2115 W. Alice Ave., Peoria (EIT-IM)

Yanke, Bruce O., 2220 Glendale, Pekin (NAT-IM)

ROCKFORD

Freeman, Robert Glen, 822 Royal Ave., Rockford (EIT-IM)

Luft, Philip H., 1154 W. Stephenson, Freeport (NAT-IM)

Lundgren, Robert Arnold, 1316 22nd St., Rockford (EIT-IM)

Noton, Ronald Edwin, Box 14, Hanover (EIT-IM)

ROCK RIVER

Buser, Robert Edward, 318 W. Hitt, Mt. Morris (EIT-IM)

ST. CLAIR

Brown, Richard Lee, 6220 JoAnn Drive, Belleville (NAT-IM)

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Cella, Paul, 1020 Pleasant, Oak Park (EIT)

Delmastro, Fred, 320 E. Plymouth, Villa Park (NAT-IM)

Fadden, Donald K., Apt. 1, 904 Curtiss, Downers Grove
(EIT-IM)

Grimm, Frank C., Jr., 3210 Adams, Bellwood (EIT-IM)

Hart, Robert F., 4505 Highland Ave., Downers Grove (NAT)

Komarek, Karl Richard, 20 Morningside, Lombard (NAT)

Proescholdt, Walter H., 4146 Ellington Ave., Western Springs
(NAT)

Ruesch, Leroy J., 4223 Edgewater, Hillside (NAT-IM)

Sahlstrom, Roy, 751 Prospect, Elmhurst (NAT)

Schjerven, William N., Jr., 546 Eastern, Bellwood (NAT-IM)

Woll, Robert Albert, 5135 Lee, Downers Grove (NAT)

SAUK TRAIL

Anderson, Walter W., 22830 Sherman Rd., Chicago Heights
(NAT)

Bass, Joseph, 231 Indiana St., Park Forest (NAT)

Pearson, Robert Elmer, 41 Blackhawk, Thornton (NAT-IM)

Wenthe, Philip K., 356 Miami, Park Forest (EIT-IM)

WEST CENTRAL

Graham, James A., 348 28th Ave., Moline (NAT-IM)

Harriott, Billie Lee, 1051 E. Seneca, Tucson, Ariz. (NAT-IM)

Hiles, Byron G., 924 Lawrence Ave., Galesburg (EIT-IM)

Malcolm, Robert LaVerne, Altona (EIT-IM)

Mason, Richard Niel, 1931 25th St., Moline (EIT-IM)

Wulf, James Bragdon, 2313 38th St., Rock Island (EIT)

Despite the fact that ISPE is growing, our record thus far in the 1961-62 Membership Contest hasn't pulled us out of LAST PLACE in our group. Our National Directors had to sit behind the skunk at the NSPE Fall Meeting in Roanoke, Va., October 19-21!

Enough said?

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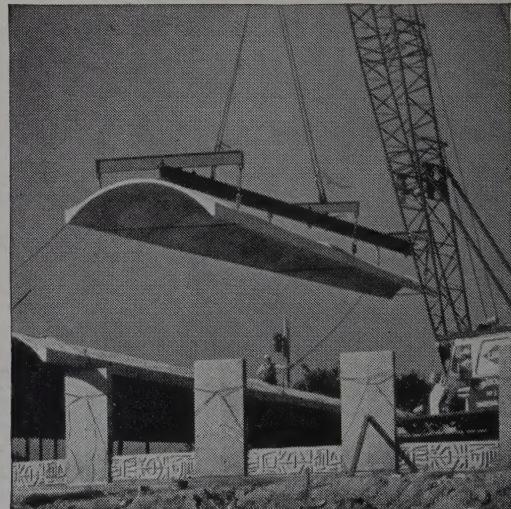
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